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METHOD OF PREPARING AN OPTICAL POLYMERIZATE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority from U.S. Provisional Patent Application Ser.

- 5 No. 60/166,184 filed November 18, 1999 and entitled "Method of Preparing an Optical Polymer".

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a method of preparing a polymerizate from a
10 two-component organic composition, the polymerizate having a refractive index of at least 1.6, an Abbe number of at least 33 and an initial Barcol hardness of at least 1. More particularly, the present invention relates to polymerizing certain two-component organic compositions comprising at least one polycyanate reactant having at least two isocyanate and/or isothiocyanate groups, and a polyamine having at least
15 two primary and/or secondary amine groups. The present invention also relates to polymerizates and photochromic articles.

2. Description of the Prior Art

A number of organic polymeric materials, e.g., plastics, have been developed as alternatives and replacements for glass in applications such as optical lenses, fiber
20 optics, windows and automotive, nautical and aviation transparencies. As used herein, the term 'glass' is meant to refer to silica-based inorganic glass. These polymeric materials can provide advantages relative to glass, including, shatter resistance, lighter weight for a given application, ease of molding and ease of dying. Representative examples of such polymeric materials include, poly(methyl
25 methacrylate), thermoplastic polycarbonate and poly[diethylene glycol bis(allylcarbonate)].

The refractive indices of many polymeric materials are generally lower than that of glass. For example, the refractive index of poly[diethylene glycol bis(allylcarbonate)] is about 1.50, compared to that of high index glass, which can
30 range, for example, from 1.60 to 1.80. When fabricating lenses to correct a given degree of visual defect, e.g., a correction for myopia, the use of a polymeric material having a lower refractive index will require a thicker lens relative to a material having